

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A method for increasing the throughput of network communications performed by a network access provider server, the method comprising:

the network access provider server establishing a connection with a client computer

the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

the network access provider server storing request information included in the request as request history data

the network access provider server forwarding the request to a server

the network access provider server receiving a response from the server

the network access provider server reviewing the response to determine whether the response includes a native expiration

when the response does not include the native expiration

the network access provider server computing a computed expiration for the response, including

the network access provider server evaluating whether the response includes a modification history

when the response includes the modification history,

the network access provider server computing a time-to-live for the response based on an age factor, a current time and a value of the modification history

the network access provider server computing the computed expiration based on the current time and the time-to-live when the response does not include the modification history,

the network access provider server retrieving a modification query value from the request history data based on a response type and a response location  
when the modification query value is retrieved,

the network access provider server computing the time-to-live for the response based on an age factor, a current time and the modification query value,

the network access provider server computing the computed expiration based on the current time and the time-to-live when the retrieving the modification query value is not successful,

the network access provider server forwarding the response to the requester

the network access provider server inserting the computed expiration into the response creating an amended response

the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object

storing the amended response

the network access provider server providing the amended response to other requesters at other client computers that request the requested object, the providing achieved without additional communication with the server.

~~the network access provider server evaluating whether the response includes a modification history~~

~~when the response includes the modification history,~~

~~the network access provider server computing a time-to-live for the response based on an age factor, a current time and a value of the modification history~~

~~the network access provider server computing the computed expiration based on the current time and the time-to-live~~

~~when the response does not include the modification history,~~

~~the network access provider server retrieving a modification query value from the request history data based on a response type and a response location~~

~~when the modification query value is retrieved,~~

~~the network access provider server computing the time-to-live for the response based on an age factor, a current time and the modification query value,~~

~~the network access provider server computing the computed expiration based on the current time and the time-to-live~~

~~when the retrieving the modification query value is not successful, the network access provider server forwarding the response to the requester.~~

2. (Original) The method of claim 1 wherein the server comprises an origin server.
3. (Cancelled)
4. (Previously Presented) The method of claim 1 wherein

when the response includes the native expiration, the network access provider server forwarding the response to the requester.

5. (Original) The method of claim 1 wherein the computed expiration is based on at least one of a response content type and a response resource identifier.
6. (Original) The method of claim 1 wherein the computed expiration is based on a time-to-live.
7. (Previously Presented) The method of claim 1 further comprising  
the network access provider server evaluating whether a content type of the response is appropriate  
the network access provider server performing the reviewing only when the content type of the response is appropriate.
8. (Previously Presented) The method of claim 7 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is in an appropriate type list.
9. (Original) The method of claim 8 wherein the appropriate type list comprises at least one of graphic, JavaScript, Cascading Style Sheet, portable document format (PDF), executable program, audio, video, and multimedia.
10. (Cancelled)
11. (Currently amended) The method of claim ~~1~~ ~~10~~ wherein the request information includes a request resource identifier, a request content type, and a modification query when the modification query is present.
12. (Cancelled)
13. (Currently amended) The method of claim ~~1~~ ~~10~~ further comprising:

when the time-to-live is greater than a defined maximum, the network access provider server setting the time-to-live to be the defined maximum

when the time-to-live is less than a defined minimum, forwarding the response to the requester.

**14.** (Original) The method of claim 12 wherein the request is a hyper-text transfer protocol (HTTP) get, the modification query value is an HTTP if-modified-since value, and the modification history value is an HTTP last-modified value.

**15.** (Currently amended) A method for increasing the throughput of network communications performed by a the network access provider server, the method comprising:

the network access provider server establishing a connection with a client computer

the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

the network access provider server storing request information included in the request as request history data

the network access provider server forwarding the request to a server

the network access provider server receiving a response from the server

the network access provider server evaluating whether the response has a status code that is actionable

when the status code is actionable,

the network access provider server reviewing the response to determine whether the response includes a native expiration

when the response does not include the native expiration

the network access provider server calculating a calculated expiration for  
the response including

the network access provider server evaluating whether the response  
includes a modification history

when the response includes the modification history,

the network access provider server computing a time-to-live  
for the response based on an age factor, a current time and a value  
of the modification history

the network access provider server computing the  
calculated expiration based on the current time and the time-to-live  
when the response does not include the modification history,

the network access provider server retrieving a modification  
query value from the request history data based on a response type  
and a response location

when the modification query value is retrieved,

the network access provider server computing the time-to-  
live for the response based on an age factor, a current time and the  
modification query value,

the network access provider server computing the  
calculated expiration based on the current time and the time-to-live  
when the retrieving the modification query value is not successful,

the network access provider server forwarding the response  
to the requester

the network access provider server inserting the calculated expiration into the response creating an amended response

the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object

the network access provider server storing the amended response

the network access provider server providing the amended response to other requesters on other client computers that request the requested object, the providing achieved without additional communication with the server

when the response includes the native expiration, the network access provider server forwarding the response to the requester

when the status code is not actionable, the network access provider server forwarding the response to the requester.

~~the network access provider server evaluating whether the response includes a modification history~~

~~when the response includes the modification history,~~

~~the network access provider server computing a time to live for the response based on an age factor, a current time and a value of the modification history~~

~~the network access provider server computing the computed expiration based on the current time and the time to live~~

~~when the response does not include the modification history,~~

~~the network access provider server retrieving a modification query value from the request history data based on a response type and a response location~~

~~when the modification query value is retrieved,~~

~~the network access provider server computing the time to live for the response based on an age factor, a current time and the modification query value,~~

~~the network access provider server computing the computed expiration based on the current time and the time to live~~

~~when the retrieving the modification query value is not successful, the network access provider server forwarding the response to the requester.~~

**16.** (Previously Presented) The method of claim 15 wherein the network access provider server evaluating whether the response has a status code that is actionable comprises the network access provider server checking to determine whether the response has a hyper-text transfer protocol (HTTP) status code of "OK" or "Not Modified".

**17.** (Cancelled)

**18.** (Currently amended) A method for increasing the throughput of network communications performed by a network access provider server, the method comprising:

the network access provider server establishing a connection with a client computer

the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

the network access provider server storing request information from the request as request history data

the network access provider server forwarding the request to a server

the network access provider server receiving a response from the server

the network access provider server reviewing the response to determine whether the response includes a native expiration

when the response does not include the native expiration

the network access provider server evaluating whether a content type of the response is appropriate



when the content type of the response is appropriate

the network access provider server computing a calculated expiration for  
the response, including

the network access provider server evaluating whether the response  
includes a modification history

when the response includes the modification history,

the network access provider server computing a time-to-live for the  
response based on an age factor, a current time and a value of the  
modification history

the network access provider server calculating the calculated  
expiration based on the current time and the time-to-live

when the response does not include the modification history,

the network access provider server retrieving a modification query  
value from the request history data based on a response type and a  
response location

when the modification query value is retrieved,

the network access provider server computing the time-to-  
live for the response based on an age factor, a current time and the  
modification query value,

the network access provider server calculating the  
calculated expiration based on the current time and the time-to-live

when the retrieving the modification query value is not successful,  
the network access provider server forwarding the response to the  
requester

the network access provider server inserting the calculated expiration into  
the response creating an amended response

the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object

the network access provider server storing the amended response

the network access provider server providing the amended response to other requesters on other client computers that request the requested object, the providing achieved without additional communication with the server

when the content type of the response is not appropriate,

the network access provider server forwarding the response to the requester

when the response includes the native expiration,

the network access provider server forwarding the response to the requester.

~~the network access provider server evaluating whether the response includes a modification history~~

~~when the response includes the modification history,~~

~~the network access provider server computing a time to live for the response based on an age factor, a current time and a value of the modification history~~

~~the network access provider server calculating the calculated expiration based on the current time and the time to live~~

~~when the response does not include the modification history,~~

~~the network access provider server retrieving a modification query value from the request history data based on a response type and a response location~~

~~when the modification query value is retrieved,~~

~~the network access provider server computing the time to live for the response based on an age factor, a current time and the modification query value,~~

~~the network access provider server calculating the calculated  
expiration based on the current time and the time-to-live  
when the retrieving the modification query value is not successful, the network  
access provider server forwarding the response to the requester~~

**19.** (Previously Presented) The method of claim 18 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is a graphic image.

**20.** (Previously Presented) The method of claim 19 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is one of a Graphics Interchange Format (GIF) file or Joint Photographic Experts Group (JPEG) file.

**21.** (Previously Presented) The method of claim 18 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is in an appropriate type list.

**22.** (Original) The method of claim 21 wherein the appropriate type list comprises at least one of graphic, JavaScript, Cascading Style Sheet, portable document format (PDF), audio, video, and multimedia.

**23.** (Original) The method of claim 18 wherein the calculated expiration is based on at least one of a response content type and a response resource identifier.

**24.** (Original) The method of claim 18 wherein the calculated expiration is based on a time-to-live.

**25.** (Cancelled)

**26.** (Cancelled)

**27.** (Currently amended) The method of claim 18 26 wherein the request information includes a request resource identifier, a request content type, and a modification query when the modification query is present.

**28.** (Cancelled)

**29.** (Currently amended) The method of claim 18 26 further comprising:

when the time-to-live is greater than a defined maximum, the network access provider server setting the time-to-live to be the defined maximum

when the time-to-live is less than a defined minimum, the network access provider server forwarding the response to the requester.

**30.** (Original) The method of claim 28 wherein the request is a hyper-text transfer protocol (HTTP) get, the modification query value is an HTTP if-modified-since value, and the modification history value is an HTTP last-modified value.

**31.** (Currently amended) A storage medium having instructions stored thereon which when executed by a processor cause a network access provider server to perform operations comprising:

the network access provider server establishing a connection with a client computer

the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

the network access provider server storing request information from the request as request history data

the network access provider server forwarding the request to a server

the network access provider server receiving a response from the server

the network access provider server reviewing the response to determine whether the response includes a native expiration

when the response does not include the native expiration

the network access provider server computing a computed expiration for  
the response, including

the network access provider server evaluating whether the response  
includes a modification history

when the response includes the modification history,

the network access provider server computing a time-to-live for the  
response based on an age factor, a current time and a value of the  
modification history

the network access provider server computing the computed  
expiration based on the current time and the time-to-live

when the response does not include the modification history,

the network access provider server retrieving a modification query  
value from the request history data based on a response type and a  
response location

when the modification query value is retrieved,

the network access provider server computing the time-to-  
live for the response based on an age factor, a current time and the  
modification query value,

the network access provider server computing the  
computed expiration based on the current time and the time-to-live  
when the retrieving the modification query value is not successful,

the network access provider server forwarding the response  
to the requester

the network access provider server inserting the computed expiration into  
the response creating an amended response

the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object

the network access provider server storing the amended response

the network access provider server providing the amended response to other requesters on other client computers that request the requested object, the providing achieved without additional communication with the server.

the network access provider server evaluating whether the response includes a modification history

when the response includes the modification history,

the network access provider server computing a time to live for the response based on an age factor, a current time and a value of the modification history

the network access provider server computing the computed expiration based on the current time and the time to live

when the response does not include the modification history,

the network access provider server retrieving a modification query value from the request history data based on a response type and a response location

when the modification query value is retrieved,

the network access provider server computing the time to live for the response based on an age factor, a current time and the modification query value,

the network access provider server computing the computed expiration based on the current time and the time to live

when the retrieving the modification query value is not successful,

the network access provider server forwarding the response to the requester.

**32.** (Original) The storage medium of claim 31 wherein the server comprises an origin server.

**33.** (Previously Presented) The storage medium of claim 31 having further instructions stored thereon which when executed by the processor cause the network access provider server to perform further operations comprising:

the network access provider server evaluating whether a content type of the response is appropriate

the network access provider server performing the reviewing only when the content type of the response is appropriate.

**34.** (Previously Presented) The storage medium of claim 33 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is in an appropriate type list.

**35.** (Original) The storage medium of claim 34 wherein the appropriate type list comprises at least one of graphic, JavaScript, Cascading Style Sheet, portable document format (PDF), audio, video, and multimedia.

**36.** (Cancelled)

**37.** (Previously Presented) The storage medium of claim 31 wherein  
when the response includes the native expiration, the network access provider server forwarding the response to the requester.

**38.** (Original) The storage medium of claim 31 wherein the computed expiration is based on at least one of a response content type and a response resource identifier.

**39.** (Original) The storage medium of claim 31 wherein the computed expiration is based on a time-to-live.

**40.** (Cancelled)

**41.** (Currently amended) The storage medium of claim 31 40 wherein the request information includes a request resource identifier, a request content type, and a modification query when the modification query is present.

**42.** (Cancelled)

**43.** (Currently amended) The storage medium of claim 31 40 having further instructions stored thereon which when executed by the processor cause the network access provider server to perform operations further comprising:

when the time-to-live is greater than a defined maximum, the network access provider server setting the time-to-live to be the defined maximum

when the time-to-live is less than a defined minimum, the network access provider server forwarding the response to the requester.

**44.** (Original) The storage medium of claim 43 wherein the request is a hyper-text transfer protocol (HTTP) get, the modification query value is an HTTP if-modified-since value, and the modification history value is an HTTP last-modified value.

**45.** (Currently amended) A network access provider server configured to accelerate network traffic delivery, the network access provider server comprising:

a processor

a memory coupled with the processor

a storage medium having instructions stored thereon which when executed cause the network access provider server to perform actions comprising

the network access provider server establishing a connection with a client computer

receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer



storing request information from the request as request history data

forwarding the request to a server

receiving a response from the server

reviewing the response to determine whether the response includes a native expiration

when the response does not include the native expiration

computing a computed expiration for the response, including

evaluating whether the response includes a modification history

when the response includes the modification history,

computing a time-to-live for the response based on an age

factor, a current time and a value of the modification history

computing the computed expiration based on the current

time and the time-to-live

when the response does not include the modification history,

retrieving a modification query value from the request

history data based on a response type and a response location

when the modification query value is retrieved,

computing the time-to-live for the response based on

an age factor, a current time and the modification query

value

computing the computed expiration based on the

current time and the time-to-live

when the retrieving the modification query value is not successful,  
forwarding the response to the requester

inserting the computed expiration into the response creating an amended response

forwarding the amended response to the requester, wherein the amended response includes the requested object

storing the amended response

providing the amended response to other requesters on other client computers that request the requested object, the providing achieved without additional communication with the server.

~~evaluating whether the response includes a modification history~~

~~when the response includes the modification history,~~

~~computing a time to live for the response based on an age factor, a current time and a value of the modification history~~

~~computing the computed expiration based on the current time and the time to live~~

~~when the response does not include the modification history,~~

~~retrieving a modification query value from the request history data based on a response type and a response location~~

~~when the modification query value is retrieved,~~

~~computing the time to live for the response based on an age factor, a current time and the modification query value,~~

~~computing the computed expiration based on the current time and the time to live~~

~~when the retrieving the modification query value is not successful,~~  
~~forwarding the response to the requester.~~

**46.** (Previously Presented) The network access provider server of claim 45 wherein the server comprises an origin server.

**47.** (Previously Presented) The network access provider server of claim 45 having further instructions which when executed cause the processor to perform further operations comprising:  
evaluating whether a content type of the response is appropriate  
performing the reviewing only when the content type of the response is appropriate.

**48.** (Previously Presented) The network access provider server of claim 47 wherein the evaluating whether a content type of the response is appropriate comprises checking to determine whether the content type is in an appropriate type list.

**49.** (Previously Presented) The network access provider server of claim 48 wherein the appropriate type list comprises at least one of graphic, JavaScript, Cascading Style Sheet, portable document format (PDF), audio, video, and multimedia.

**50.** (Cancelled)

**51.** (Previously Presented) The network access provider server of claim 45 wherein  
when the response includes the native expiration, forwarding the response to the requester.

**52.** (Previously Presented) The network access provider server of claim 45 wherein the computed expiration is based on at least one of a response content type and a response resource identifier.

**53.** (Previously Presented) The network access provider server of claim 45 wherein the computed expiration is based on a time-to-live.

**54.** (Cancelled)

**55.** (Currently amended) The network access provider server of claim 45 54 wherein the request information includes a request resource identifier, a request content type, and a modification query when the modification query is present.

**56.** (Cancelled)

**57.** (Currently amended) The network access provider server of claim 45 54 wherein the storage medium has further instructions stored thereon which when executed cause the computing device to perform further operations comprising:

when the time-to-live is greater than a defined maximum, setting the time-to-live to be the defined maximum

when the time-to-live is less than a defined minimum, forwarding the response to the requester.

**58.** (Previously Presented) The network access provider server of claim 57 wherein the request is a hyper-text transfer protocol (HTTP) get, the modification query value is an HTTP if-modified-since value, and the modification history value is an HTTP last-modified value.